

WATER QUALITY IN CORAL REEF AREA AT PULAU SATANG, MATANG, SARAWAK

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ABSTRACT

Pulau Satang is one of the few locations at the coast of Sarawak where coral reefs can be found. This study was carried out to investigate the water quality in coral reef area at Pulau Satang, Matang, Sarawak. Water samples were collected using water sampler from five selected stations, at two different depths around Satang Island. The water quality parameters studied were temperature, dissolved oxygen (DO), pH, salinity, chlorophyll *a*, nitrate, orthophosphate and silicate. The mean value for the parameters are; temperature, 29.68 °C; DO, 6.46 mg/L; pH, 7.88; salinity, 33.05 psu; chlorophyll *a*, 0.64 µg/L; nitrate, 0.03 mg/L; orthophosphate, 0.54 mg/L and silicate, 0.16 mg/L. Temperature exceed the optimum for corals. DO at bottom of two stations dropped below 5 mg/L, the minimum for healthy aquatic organism. The highest chlorophyll *a* corresponded with high nitrate. High nutrients are attributable to anthropogenic pollution from the populated mainland delivered through the few large rivers within the intermediate vicinity of Pulau Satang. High nutrient condition may impact the growth of the corals.

Key words: coral reefs, Pulau Satang, water quality

INTRODUCTION

Coral reefs are considered the most diverse marine ecosystem in the world. They contribute to the ecosystem and marine organisms by providing breeding ground and habitat for fishes and other living organisms. The coral reefs are economically important to Malaysia for mainly two reasons which are fishing and tourism (Anderson, 2002). Coral reef in Pulau Satang is one of the most diverse coral reefs areas in Sarawak and one of the few coral reef areas left available in Sarawak. According to tourist and local villagers, the coral reefs diversity in Pulau Satang degraded due to many factors in the past few years. One of the potential factors affecting the coral reefs health could be from the discharge of waste from agricultural and other anthropogenic

sources through the nearby rivers. Human activities such as construction, logging, urban development, and industrial activity have a negative impact on water quality and nutrient content (Pereira, 1998). The coral reefs in Pulau Satang are fairly close to the shore. Nutrient enrichment can be one of the most serious forms of pollution for coral reefs, particularly close to shore (Gibson *et al.*, 1998). Therefore, a baseline data on water quality is important to provide sufficient information that can be used for future reference in mitigating pollutions, monitoring, and maintaining the coral reef environment. Thus, the objective of this study was to determine the water quality in coral reefs area at Pulau Satang.